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ABSTRACT

Pre- and post-tests were administered to three treatment (136 emotionally handicapped, 8 physically handicapped, and 79 trainable mentally retarded students) and two non-treatment groups (11 emotionally handicapped and 70 non-handicapped students) for purposes of assessing teacher, student, and program centered objectives. Administered or completed by the 21 teachers involved, the instruments employed were: the Student Content Test; the Student Attitude Survey; the General Classroom Behavior Teacher Rating Scale; the Participant Evaluation; and the Participant Narrative Evaluation. The four teacher centered objectives focused on knowing the what, where, how, and why of outdoor teaching; the three student centered objectives focused on increased comprehension of the natural world, self, and others; and the program objectives focused on improvement of student communication skills, understanding re: local environment and environmental problems, social responses, and manipulative/motor skills. Results indicated 7 of the 13 objectives were met and 3 were partially met, while 3 of the program objectives were not directly measurable. Since 3 of the 13 objectives were not measurable, it was concluded that the project was nearly 100% successful. (JC)

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Outdoor Education for Emotionally Handicapped Students in Central New York

RC009498

Final Report

September, 1975

OUTDOOR EDUCATION
for
EMOTIONALLY HANDICAPPED STUDENTS
in
CENTRAL NEW YORK

A Report on Project 75-940
for
Handicapped Children under Title VI-B
August 1, 1974 - July 31, 1975

Submitted by
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September 1975

Mr. Charles Matkowski
Division of Handicapped Children
N.Y.S. Education Department
55 Elk Street
Albany, New York 12207

Dear Charles:

Enclosed is the final report covering the E. S. E. A. Title VI project "Outdoor Education for the Emotionally Handicapped in Central New York."

Onondaga Nature Centers is particularly grateful to you for providing the opportunity to participate in this special pilot program. The cooperation from your section from the Title VI office and from the Division for Handicapped Children has been exemplary. I would like to express a special thanks to Zelda Kay, Murray Schubert, Ray L'Heureux and Ted Kurtz.

Local cooperation has also been exceptional in all the BOCES and school systems with which we worked.

Onondaga-Madison BOCES in serving as L.E.A. and assisting in coordination of the program have made an uncomplicated and orderly administration of the grant possible. Irvin E. Henry, Superintendent, Dr. Edith Regensburger, of the Special Education Department who served as project co-director and Mr. Robert Everingham, Business Manager were all most helpful.

Directors of Special Education in Cayuga, (Mark Costello) Cortland-Madison (George Freebern) and Oswego BOCES, (Dr. David Stern) have given full cooperation and encouragement.

Dr. Bernice Kipfer, Director of Special Education for the Syracuse City Schools provided invaluable advice on developing the project concept and the evaluation procedure.

Mr. James Miller, the project evaluator has provided an invaluable perspective on the effectiveness of our efforts.

Last but not least the classroom teacher, who is mentioned elsewhere in the report have gone out of their way in helping Jack Gramlich to provide what we all believe was an exceptional program.

We look forward to future programs.

Sincerely,

John A. Weeks

JOHN A. WEEKS
Director

PREFACE

Onondaga Nature Centers, Inc. is a non profit membership corporation, formed in 1966 to develop nature centers and to provide environmental education to the public.

In the past nine years, the services provided by ONC have been greatly expanded. The staff now includes naturalists, artists and educators and programing is offered at Beaver Lake Nature Center and to schools through a BOCES contract. Currently programs are being offered to a nine county area in Central New York.

In 1974, Onondaga Nature Centers developed a program for outdoor education for emotionally handicapped students in Central New York. This is the final report describing our involvement with the project.

TABLE OF CONTENTS

I - Introduction.....1
A. Philosophy.....1
B. Target Population.....1
C. Objectives.....1

II - Summary of Project Activities.....2
A. Class Visits.....2
B. Saturday Workshops.....2
C. June Conference.....3

III - Statistical Evaluation.....5
A. Evaluation Design.....5
B. Subject Population.....5
C. Evaluation Objectives.....6
D. Data Collection and Analysis.....7
E. Participant Narrative Evaluation.....7
F. Summary of Evaluation/Objectives Matrix.....10
G. Recommendations.....20

IV - One Year Outdoor Education Program.....21
A. Introduction.....21
B. Guidelines.....22
C. Language Arts.....22
D. Monthly Units.....23

V - Appendices.....33
A. Proposal Summary.....34
B. Participating Teachers.....41
C. Staff Qualifications and Duties.....42
D. Evaluation Instruments.....46
E. Teacher Loan Kit Summary.....57
F. Description of Monthly Units.....58
G. Budget.....62

I. INTRODUCTION

A. Philosophy of Outdoor Education

Our experiences with children in the last four years have shown us that outdoor education can be an extremely effective medium for instruction. Outdoor education activities can take place in wild natural areas or on busy city streets. Even the limited resources of an "empty" playground can be highly motivating.

The potential of outdoor education is especially great for teaching emotionally handicapped students. Outdoor education activities are flexible and informal. The activities encourage the participation of all students. Finally, the students are motivated by resources which are available and accessible.

The possibilities for using the outdoors in teaching emotionally handicapped students exist in many subjects. Outdoor activities in math, social studies, science, and language arts can and should be integrated into every student's education.

B. Target Population

Onondaga Nature Centers, Inc. offered services in outdoor education to emotionally handicapped students in central New York. This area included Cayuga, Cortland, Madison, Oneida, Onondaga, and Oswego Counties. Because of the large concentration of people in Onondaga County, however, the most service was offered to students living there.

Teachers in this geographical area were invited to participate in the program, with participation implying a willingness to try out the ideas of the Onondaga Nature Centers' staff. The response of the teachers was very good. By October, 24 teachers had agreed to participate in the program. Included in this number were teachers of physically handicapped students and trainable mentally retarded students - two days of service a month were set aside for them.

C. Objectives

Recent educational projects have demonstrated that emotionally handicapped children can benefit from a variety of educational experiences broadly classed as outdoor education. These benefits include an increased comprehension of the natural world through direct experiences with nature, an increased comprehension of self through exposure to certain unifying laws encompassing both the human and natural community, and an increased comprehension of others through mutual reaction to highly motivating experiences.

The objectives for the students participating in the outdoor education program corresponded to the above benefits.

1. Increase understanding of the environment including some comprehension of local environmental problems.

2. Improve communication skills.

   a. More precise terminology in working vocabulary

   b. Better verbalization of abstract ideas (beauty, sensory perceptions, and emotional responses)

   c. Better ability to report orally to family and school groups about outdoor experiences

3. Improve social responses (cooperating, sharing, and contributing in group activities).

Another objective of the program was to encourage teachers to include outdoor education in their weekly schedule. Each school has a variety of resources near it which have potential for outdoor education. By showing teachers how and when to use the resources, it was expected that outdoor classes would become a regular part of the educational program.

II. SUMMARY OF PROJECT ACTIVITIES

A. Class Visits

An educator from Onondaga Nature Centers, Inc. taught a class for each teacher at least once every month during the school year. These lessons were held either outside the school on the school grounds or at nearby resource areas. Each lesson introduced monthly units which had been planned at the beginning of the school year. After each lesson, the ONC educator gave the classroom teacher suggestions for follow-up lessons (See Appendix E). These units were planned according to the season of the year and the developing skill in outdoor education of the students.

The follow-up lessons taught by the teachers were a very important part of the project. Each teacher was asked to teach three lessons a month. Suggestions for possible activities were described in a three ring notebook filled with activity sheets which was distributed to each teacher. A measure of the response of the teachers is that over 300 outdoor activities were reported by the teachers. Also, four teachers went on overnight camping trips with their classes.

B. Saturday Workshops

During the 1974-75 school year, Onondaga Nature Centers, Inc. held 4 Saturday workshops for the teachers who participated in the project. There were 4 sessions in each workshop and the workshop lasted approximately five hours. All four workshops were held at Beaver Lake Nature Center, a county park in Onondaga County.

Three guidelines were used to plan the sessions of the workshops. These were:

(1) The sessions should expand the environmental awareness of the teachers.

(2) The activities which teachers should use with their classes should be demonstrated in the sessions.

(3) The teachers would get more involved in teaching outdoors if they more fully understood the philosophy of outdoor education.

Holding workshops for teachers in special education this past year was very rewarding. As the participating teachers learned more about outdoor education, they were able to request activities in certain areas of interest.

The workshops quickly evolved into work sessions with the teachers and staff of ONC, Inc. developing materials appropriate for classroom use.

Recommendations for future workshops are summarized below.

(1) The three guidelines which we used worked very well.

(2) Workshops should be held at least three times a year to familiarize teachers with activities in each season of the year.

(3) Workshops should be held at a centrally located facility, preferably a school.

(4) Teachers should be encouraged to undertake long term projects with their classes and report periodically on their success.

(5) As teachers they should get more experience in outdoor education and assist in the planning and execution of the workshop sessions.

C. June Conference (5-day workshop)

In June, 1975, Onondaga Nature Centers, Inc. held a 5-day conference for teachers of emotionally handicapped students. All of the teachers who had participated in the project throughout the year were invited as well as other teachers of emotionally handicapped children from the central New York area.

The conference was held at a large residential facility, the Cayuga Preventorium, located 6 miles from Ithaca on the west side of Cayuga Lake. The natural setting, spacious grounds (83 acres of lawn, hardwood forest and pine plantation), and relative seclusion made it an ideal location for the conference.

The objectives of the June conference were different from those of the Saturday workshops. This conference was specifically planned to develop a one year curriculum in outdoor education. Each morning the participants attended sessions in general areas. Each afternoon the participants adopted the content of the morning's session and developed activities for teaching outdoors. The daily program is summarized below.

Sunday

The teachers arrived in time for the evening meal. After dinner and a brief introduction session, the teachers participated in a series of awareness activities to get in the spirit of outdoor education.

Monday

The morning session introduced the physical environment. Content included the relationships between air, water and soil. In the afternoon session, the teachers developed activities for teaching lessons about the physical environment in the outdoors.

Tuesday

The morning session introduced the relationships between the plants and animals found in any natural environment. The afternoon again was devoted to teachers developing activities in outdoor education following-up the morning's session.

Wednesday

The morning session took advantage of the resources available in an urban environment. Activities were demonstrated both at city parks and on city streets.

Thursday

Aquatic study activities were demonstrated in the morning session. An evaluation session concluded the conference.

The ideas generated in the afternoon sessions were especially helpful in developing a year-long outdoor education program.

III. STATISTICAL EVALUATION

A. Evaluation Design:

The evaluation Design for the Outdoor Education Project for the Emotionally Handicapped of Central New Y[illegible]s a pre-test/post-test mean gain comparison. Three treatment and two non-[illegible]atment groups were used. The non-treatment (quasi control) groups were used for gross comparisons only. Given the developmental nature of the project, type of instrumentation, and sophistication of data collection techniques, the application of tests of statistical significance would be totally inappropriate. The value of the evaluation at this point is to provide information to the project staff and others interested in outdoor education activities with the emotionally handicapped upon which decisions about future efforts in this area can be based. In brief, this is, as it should be, a formative evaluation effort.

B. Subject Population:

Table I

Treatment Groups

Group	Number of Classes	Number of Subjects as of 9/1/74	Ages as of 9/1/74 Low	High
Emotionally Handicapped	17	136	5	17
Physically Handicapped	1	8	7	12
Trainable Mentally Retarded	6	79	5	20

Non-Treatment Groups

Emotionally Handicapped	1	11	11	13
Non-Handicapped	3	70	8	12

The Emotionally Handicapped treatment group represents various school systems: City of Syracuse, Cortland-Madison BOCES, Cayuga BOCES, Onondaga-Madison BOCES. All groups were self-selected based on the opportunity and willingness to participate. Considerable subject attrition was experienced on the post-evaluation. The only post evaluation for the TMR group was the participant evaluation.

C. Evaluation Objectives:

The project objectives are restated for the purpose of clarity and greater specificity. The first four objectives have been extrapolated from assumptions about teachers vis-a-vis outdoor education as stated in the proposal.

Teacher Centered Objectives:

1. As a result of participation in the Outdoor Education Project for the Emotionally Handicapped of Central New York the teachers will know what to teach out of doors.
2. As _ _ _ _ _ will Know How _ _ _.
3. As _ _ _ _ _ will Know Where _ _ _.
4. As _ _ _ _ _ will Know Why _ _ _.

Student Centered Objectives:

1. As _ _ _ _ _ the students will exhibit increased comprehension of the natural world through direct experiences with nature.
2. As _ _ _ _ _ will exhibit increased comprehension of self through exposure to certain unifying natural laws which encompass both human and the natural community.
3. As _ _ _ _ _ will exhibit an increased comprehension of others through mutual reaction to shared experiences which are highly motivating.

Objectives of the Program:

1. As _ _ _ _ _ the students will exhibit an improvement in communication skills including development of vocabulary through the reaction to experiences in which all senses are involved.
   a. Incorporation of more precise terminology in working vocabulary.
   b. Better verbalization of abstract ideas such as beauty, sensory perceptions, feelings and emotional responses.
   c. Ability to report orally on experiences to family and school groups.
2. As _ _ _ _ _ the students will exhibit an increased understanding of environment, including some comprehension of local environmental problems.
3. As _ _ _ _ _ the students will exhibit an improvement of social responses, especially team work skills, cooperation sharing and contributing in simple project work.
4. As _ _ _ _ _ the students will exhibit an improvement of manipulative and motor skills through operation of simple equipment used in outdoor studies.

D. Data Collection and Analysis:

All instruments (See Appendix D for copies of instruments) were administered by or completed by the participating teachers. The results of the Student Content Test, Student Attitude Survey and the General Classroom Behavior Teacher Rating Scale are summarized in Table III, IV, and V. The results of the Participant Evaluation are summarized in Table VI.

E. Participant Narrative Evaluation:

Items 11 and 12 of the participant evaluation were open ended to allow the participants to express views not covered in the first 10 questions. These items were designed to provide the project staff with information for making decisions about modifying the project in the future.

Item 11: What were the strong points of the program?

The comments on the project in general and Jack Gramlich in particular were extremely positive. Many expressed the hope that the project and Jack would return next year. One teacher indicated that one of her children who had formerly delighted in killing classroom animals had become very compassionate and had even lectured some of the other children on the humane treatment of animals. The response to the lessons and activity sheets was highly laudatory.

Item 12: I would suggest the following to improve or strengthen the program.

The participants' suggestions generally consisted of requests for more. Several suggested some restructuring of the activities to better articulate with the level of their students. Several participants suggested an expansion of the teacher training functions. Several teachers inquired about the possibility of weekend or full week training sessions prior to the start of the next school year. Also suggested were greater involvement of science supervisory personnel in the planning and training phases, a newsletter and seminars to enable the participants to share ideas. All of the suggestions were positive and indicated a willingness and even an eagerness to become more involved in the project.

TABLE II

Instrument	To Measure	Measurement Mode	Scoring	Developed by	Group Administered to Pre	Post	Comments
Student Content Test	Content of Outdoor Education	Pictorial and verbal discrimination.	Total possible score 100. 5 points per question, partial credit awarded on some questions.	Onondaga Nature Centers, Inc.	EH-T PH-T EH-NT	EH-T PH-T EH-NT	Level of abstraction may be too difficult for emotionally handicapped, definitely not appropriate for mentally retarded.
Student Attitude Attitude Survey	self concept attitude toward school attitude toward outdoor education	quasi semantic differential verbal discrimination	5 point scale based on 5 choices. Quest.# 2,6, 13,15,20 scored as subtest on outdoor ed. Highest possible score 25/100.	Dept. of Spec. Ed. Syr. City Sch. Adapted by Onondaga Nature Centers.	EH-T PH-T EH-NT	EH-T PH-T EH-NT	Instrument may not be appropriate for EH subject self evaluation - suggest correlation with observational instruments. PH-T pre-test not scored.
General Classroom Behavior Teacher Rating Scale	student behavior	quasi semantic differential	5 point scale. 12 questions. 1=highest 5=lowest Highest individual score 12.	Syracuse City School District	EH-T PH-T EH-NT	EH-T PH-T EH-NT	Negative Movement, i.e. post-pre = negative value shows improved behavior
Teacher Narrative Evaluation Form	TMR-NT Group attitude, knowledge of outdoor ed.	teacher narrative/ description of each child	Individual observation only.	Onondaga Nature Centers	TMR-NT	None	post observations not completed.

TABLE II (Cont'd)

Instrument	To Measure	Measurement Mode	Scoring	Developed by	Group Administered to: Pre	Group Administered to: Post	Comments
Participant Evaluation	teacher reaction and attitude toward project	quasi semantic differential 5 point scale. 5 highest rank. 10 questions + 2 open ended questions for appropriate comments & suggestions	scored by individual questions	James F. Miller - principal investigator	None	Teachers of EH-T PH-T TMR-T	designed as post evaluation only -

F. Summary of Evaluation/Objectives Matrix:

The objectives, as restated in the Evaluation Objectives above, were placed in an Evaluation/Objectives Matrix, Table VII. The purpose of this technique is to summarize the results of the evaluation as concisely as possible. (See Table VII.)

Of the 13 objectives of the project, 7 were judged to have been met, 3 were partly met and 3 were not directly measured by any of the data collected. The 3 objectives that were judged to have been partly met could have been judged to have been fully met. The reason that they were classified as partially met was that no clear expectation of the amount of movement or improvement in self concept or classroom behavior were specified. Three objectives, Objectives of the Program 1b, 1.c., and 4 did not have instruments or data collection specifically aimed at an evaluation of them. It would be inappropriate to speculate as to the achievement of these objectives.

Discussion:

Although it is fashionable to subject evaluation data to a "t" test or other tests of statistical significance, the evaluator questions the wisdom and utility of such efforts. More to the point is the practical significance, viability and utility of a project, particularly in the developmental stages. The nature of the instruments, data collection techniques and the subject population violate most of the assumptions and constraints of tests of statistical significance.

The project met or partially met 10 of the 13 objectives. Since the remaining three objectives were not measured it would not be unreasonable to rate the project as nearly 100% successful. This investigator is obliged to conclude, that unless there is some massive conspiracy to hide the truth, this is an excellent project. To be sure, there are some rough edges. This does not diminish or detract from the basic utility or quality of the project.

TABLE III

Results of Student Content Test

Group	Number	Pre-test $\bar{X}$	Post-Test $\bar{X}$	Change Post $\bar{X}$ - Pre $\bar{X}$
Emotionally Handicapped Treatment	59	59.42	66.10	6.68
Emotionally Handicapped Non-Treatment	10	56.60	55.00	-1.60
Physically Handicapped Treatment	6	71.67	72.67	1.00
Non-Handicapped Non-Treatment	60	72.93	75.92	2.99

Discussion:

It should be noted that only those subjects with scorable pre-tests and post tests have been included in the final data analysis. The data indicate that the primary treatment group, emotionally handicapped, gained 8.28 points more than the primary non-treatment group, of emotionally handicapped. The EH treatment group also showed a 3.69 point gain over the next nearest group, the non-handicapped non-treatment or quasi-control group. The physically handicapped treatment group exhibited a gain of 1.0 points. It may be appropriate to examine the objectives and activities for this group to determine if greater gain might be achieved.

It is fair to conclude, that from the practical standpoint the project provided appropriate and meaningful experiences for the participants, particularly the primary target group.

TABLE IV

Results of Student Attitude Survey

Group	Number	Sub-Test			Total		
		Pre-test $\bar{X}$	Post-test $\bar{X}$	Change Post-pre	Pre	Post	Change
Emotionally Handicapped Treatment	54	21.48	21.72	.24	82.0	78.61	-3.89
Emotionally Handicapped Non-Treatment	10	18.9	18.9	-0-	74.2	78.5	4.3

Discussion:

No attempt was made to gather data via this instrument on the trainable mentally retarded treatment group or the non-handicapped non-treatment group. The data for the Physically Handicapped Treatment group were incomplete. The subtest score consists of the score of 5 questions specifically designed to survey attitudes toward the out-of-doors. (Questions 2, 6, 13, 15 and 20) The treatment group exhibited an overall negative change, however, this survey measured their attitude toward school in general and not the project in particular. It should also be noted that the change on the Classroom Behavior Rating scale was in a positive direction. This experience suggests that a strategy for measuring the students attitude vis-a-vis outdoor education should be developed.

TABLE V

Results of General Classroom Teacher Behavior Rating Scale

Group	Number	Pre-test $\bar{X}$	Post-test $\bar{X}$	Change * Post - Pre $\bar{X}$ $\bar{X}$
Emotionally Handicapped Treatment	92	32.13	30.32	-1.81
Emotionally Handicapped Non-treatment	10	33.4	33.6	.20*
Physically Handicapped Treatment	7	34.71	23.86	-10.85*

*On this instrument, 1 is the most desirable score and 5 the least desirable. The highest possible score is 12 and the lowest 60. Desirable changes are in the negative direction.

Discussion:

This instrument, like the Student Attitude Survey (Table IV) assessed the child's overall behavior. It would be more appropriate to gather data on the behavior of the students when involved in outdoor education activities vis-a-vis their general behavior.

Both treatment groups exhibited a positive change, i.e. lower post test scores. The P.H. group exhibited the greatest improvement. This was not an unexpected outcome since the E.H. pupils, by definition have behavioral disorders. The education environments of the various E.H. classes differ widely and some showed a much larger gain than others.

TABLE VI

PARTICIPANT EVALUATION FORM

N=21

Question	Response	Number 0 5 10 15 20	Totals
1. The project helped me understand why outdoor education is important.	NR/0		0
	1		0
	2		1
	3		4
	4		9
	5		7
2. As a result of my participation in the project I have a better understanding of what to teach about the out of doors.	NR/0		0
	1		0
	2		0
	3		2
	4		9
	5		10
3. I have a better understanding of how to teach outdoor education.	NR/0		0
	1		0
	2		0
	3		1
	4		13
	5		7
4. I am more aware of the facilities available for teaching outdoor education.	NR/0		0
	1		0
	2		0
	3		4
	4		8
	5		9

TABLE VI (Cont'd)

N=21

Question	Response	Number 0 5 10 15 20	Totals
5. I have incorporated outdoor education into my schedule on a regular basis.	NR/0		1
	1		0
	2	———	3
	3	——	2
	4	————————	9
	5	———————	6
6. My students have increased their comprehension of the natural world through the experiences provided through the project.	NR/0		0
	1		0
	2	——	1
	3	———————	4
	4	————————————	10
	5	———————	6
7. The experiences provided by the project have expanded my students vocabulary.	NR/0	——	1
	1	——	1
	2	———	2
	3	————————	5
	4	———————————	9
	5	————	3
8. The workshops, conferences, etc. provided by Onondaga Nature Center were helpful to me in planning outdoor education experiences for my students.	NR/0	——————————— (Did not attend any workshops)	10
	1		0
	2		0
	3	——	1
	4	————————	7
	5	————	3

TABLE VI (cont'd)

N=21

Question	Response	Number 0 5 10 15 20	Totals
9. The Nature Center Staff has been helpful to me in planning outdoor education for my students.	NR/0	–	1
	1		0
	2	–	1
	3	–	1
	4	———	6
	5	———————	12
10. I would participate in the outdoor education project next year; 1. Only under threat of death. 2. If my administrator gave me no choice. 3. With mild protest. 4. Gladly. 5. And encourage other teachers of the handicapped to do so.	NR/0		0
	1		0
	2		0
	3		0
	4	–	1
	5	———————————	20

Discussion:

As can be seen, the teacher response to this project was extremely positive. Of particular interest is the response to question 10 in which everyone would participate again and 20 of 21 would recommend participation to others. This may be "soft" data but it is hard evidence.

TABLE VII

EVALUATION/OBJECTIVES MATRIX

Objectives	Evidence (Data Collection)	Criterion Level	Level Achieved	Objective Met	Objective Partially Met	Objective Not Met	Comments
A - Teachers:							
1. As a result of the Outdoor Education Project for the Emotionally Handicapped of Central New York the teachers participating in the project will know <u>what</u> to teach out-of-doors.	Participant Evaluation Question #2	60% rating 3,4,or 5	100%	X			
2. As a result - - - - - - - <u>how</u> to teach out-of-doors.	Participant Evaluation Question #3	60% rating 3,4 or 5	100%	X			
3. As a result - - - - - - - <u>where</u> to teach out-of-doors.	Participant Evaluation Question #4	60% rating 3,4 or 5	100%	X			
4. As a result - - - - - - - <u>why</u> to teach out-of-doors	Participant Evaluation Question #1	60% rating 3,4 or 5	95%	X			

TABLE VII (Cont'd)

Objectives	Evidence (Data Collection)	Criterion Level	Level Achieved	Objective Met	Objective Partially Met	Objective Not Met	Comment
B – Student Centered:							
1. As a result of the Outdoor Education Project for the Emotionally Handicapped of Central New York the students will exhibit increased comprehension of the natural world.	Participant Evaluation Question #6	60% rating 3, 4 or 5	94%	X			Instrument may require visual and semantic discrimination beyond ability of subjects.
	Student Content test	Not set	E-H Treatment Post $\bar{X}$ – Pre $\bar{X}$ = 6.68	X			
			P.H. Treatment Post $\bar{X}$ – Pre $\bar{X}$ = + 1.0	X			
2. As a result- - - - - - - - -the students will increase comprehension of self.	Student Attitude Survey	Not set	E-H Treatment Post $\bar{X}$ – Pre $\bar{X}$ = -3.89		X		1) Student Attitude Survey instrument may not be appropiate for E-H students.
3. As a result - - - - - - - - -the students will have an increased comprehension of others.	General Classroom Behavior Teacher Rating Scale	Not set	E-H Treatment Post $\bar{X}$ – Pre $\bar{X}$ = -1.81		X		2) Objective stated about behavior rather than specific attitude and behavior during Outdoor Ed. sessions.
			P.H. Treatment Post $\bar{X}$ – Pre $\bar{X}$ = -10.85		X		3) Neither instrument directly measures the objectives

TABLE VII (Cont'd)

Objectives	Evidence (Data Collection)	Criterion Level	Level Achieved	Objective Met	Objective Partially Met	Objective Not Met	Comment
C - Program							
1. a) As a result of — the students will incorporate a more precise terminology.	Participant Evaluation Question #7	60% rating 3, 4 or 5	89.5%	X			This is an indirect measure. The gain on the content test might also be a function of increased precision in terminology.
b) As a result — the students will better verbalize abstract ideas, sensory perceptions, feelings, and emotional responses.	Not directly measured						
c) As a result of — the students will improve their ability to report orally on experiences to family and school groups.	Not directly measured						
2. As a result of——— the students will increase their understanding of the environment.	(See Student Centered Objective B-1)						
3. As a result of——— the students team work skills, cooperation, sharing and contributing in simple project work will improve.	(See Student Centered Objectives B-1 and B-3)						
4. As a result of ——— the students manipulative and motor skills will improve.	Not measured						

G. Recommendations:

The recommendations below are confined to those issues germane to the execution of clear, meaningful and manageable evaluation of future projects of this nature. The recommendations are based on the certain knowledge that each day spent in the planning of an evaluation will save five days in the execution there of. The time to hire an evaluator is at the planning stage of the project.

1. Clear statement of objectives in behavioral terms.

2. Detailed specification of the activities designed to meet each objective.

3. The development of new instruments and techniques designed specifically for the subject population.

4. Clear statement of the expected level of accomplishment of each objective, and how it is to be measured.

5. Placing the objectives (1), activities (2), instruments (3) and criterion level (4), in a matrix which could also serve as a lesson plan and check-list for the accomplishment of the objectives. This technique will allow formative evaluation of the appropriateness of the objectives and activities.

6. Teacher training in the use of the instruments and observational techniques; (3) above.

7. Clear determination of the type of child and age group among the handicapped that can best profit from the project.

8. Clear statement of the purpose of the control (non-treatment) group comparisons.

9. Specific statement of assumptions and criterion for the selection of non-treatment groups.

10. Complete statement of all variables, i.e., age, sex, type of setting, handicap, etc., to be examined and compared.

11. Setting up of an evaluation/investigatory matrix in the planning stages of the project to speed and simplify the evaluation process.

12. Survey parent attitude/observation regarding their child's participation in outdoor education.

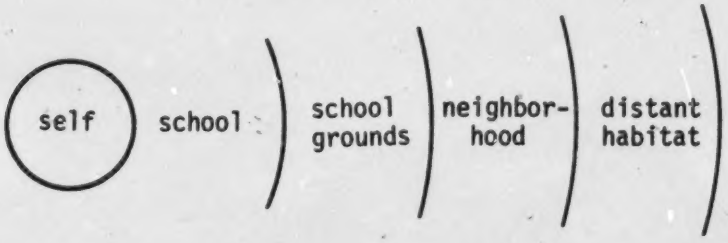
13. Attitude studies/measurement be made in comparison with behavior under normal class vis-a-vis behavior in outdoor education classes.

IV. ONE YEAR OUTDOOR EDUCATION PROGRAM

A. Introduction

This one-year program is based both on our experiences with emotionally handicapped children during the 1975-1976 school year and the recommendations and suggestions of teachers at the five-day June conference.

As the students develop skills for learning in the outdoors, they should be exposed to different habitats. At the beginning of the year, however, lessons should be confined to areas close to the school. As familiarity and success with techniques occur, the students should progress to activities in other areas. One way this can be diagrammed is by representing the environment around the school as a series of concentric circles, the inner circles representing locations close to the school and the outer circles representing habitats far away from the school.



The activities which are described in this section are put in an order which takes the season of the year into account. The activities also build upon each other with skills learned at the beginning of the year being reinforced throughout the year. For an example, measurement activities in the winter could measure the volumes of snow and ice, while in the spring the activities could measure the amount of sap required to make a gallon of maple syrup.

At this point it should be mentioned that in the ideal situation, the classroom teacher would integrate a series of activities into the existing program. Outdoor activities should be used to reinforce or enhance other lessons. Therefore, when it is possible the activities which are described in this report should be integrated into as many different subjects as possible and not regarded as a special activity period.

B. Guidelines for Using the Curriculum

1. Read the entire outline before planning lessons.

2. Plan at least one outdoor activity each week. This will provide continuity and constant reinforcement to the lessons in the program.

3. Language Arts should be incorporated into as many activities as possible. (Suggestions for the activities are included.)

4. Students should get actively involved in outdoor activities. The students should be encouraged to use simple equipment or make their own science equipment.

5. Integrate outdoor activities into as many different subjects as possible.

6. An overnight program can be made an important part of the program. The activities should relate to what you have been doing during the year. This report, however, will not include planning for overnight trips.

C. Language Arts

The techniques for language arts activities are described below. Language arts should be used in as many activities as possible. We feel it is important to develop different skills for observing natural objects and to be able to describe these observations to others.

1. Vocabulary development: Have each student describe an object, using different adjectives. List all the adjectives.

2. Communication skills: Have the students
   a. identify similarities and differences between two objects that appear to be the same
   b. give directions to other students. Ex: put the flat rock under the round rock.
   c. follow a sequence of orders
   d. record their observations on a cassette tape recorder

3. Role Playing: Observe an animal and then imitate its behavior.

4. Write Poetry: List different sensory perceptions observed at some natural area. This is a good introduction to writing poetry. The final result depends on the ability of the students.

D. Monthly Units
September

Introduction

Many students will be performing outdoor education activities for the first time and the students should be carefully prepared for what they will be doing. It is also important that the students know what will be expected of them.

Because outdoor education will be a new experience, the first activities should be performed right on the school property. As the students get more experience, classes can and should be held at a greater distance from the school building. Also, because this will be their first exposure to outdoor education, the students should learn skills for investigation and observation. Accuracy and thoroughness should be emphasized rather than speed. Students should also employ all of their faculties when making observations.

Awareness

1. Blindfold students and have them identify smells, textures, tastes, sounds, etc. of natural objects.

2. Have students list adjectives which describe different natural objects.

3. Make texture rubbings of different surfaces and objects.

4. Examine an object. Then examine the same object with a hand lens. Compare observations.

Science and Math Activities

1. Learn how to use a ruler and yardstick.
   a. Measure objects in the room, dimensions
   b. Learn "length" and "width" and how to give measurements.
   c. Learn height of students.

2. Differentiate between living and non-living things in the room. Find things that once were living.(What is the difference between living and non-living things?)

Group Activities

1. Have each student find an object smaller than a football and bring it back to the classroom. Then break up into groups and have each student describe their object in terms of size, shape, color, etc. to other students in the group.

2. Have a person from one group describe an object to the other group. Award points both for giving good descriptions and for understanding descriptions.

3. Have a group of students measure the perimeter of the room, each student measuring no more than one side. Compare results.

October

Introduction

The activities for the second month should be a continuation of the first month's activities, depending of course, on the ability of the students. Continue with the awareness activities, language arts activities, and math and science activities. As students become more familiar with objects found near the school, begin examining objects found in ever increasing distances from the school.

Awareness

1. Make a map of the school on a large surface (bulletin board or black board), using different colored paper to represent buildings, vegetation types, and pavement.

2. After the map is made, find small objects and attach them to the map (put them in plastic bags if necessary) at the place where they are found.

3. Take pictures of different places and attach the snapshots to the map in the appropriate place. (The students may have to learn how to take pictures first.)

Science and Math Activities

1. Measure long distances outside using only a ruler or a yardstick. (Do not use a tape measure yet.)

2. Plant different objects. Which grow?

3. Plant 100 seeds (the older the better) in moist towels in a dark room. What percentage grow. Be sure to keep the towels moist but not wet.

4. Plant seeds and keep track of their growth. The students will want their seeds to grow well. Vary the amounts of water, light and temperature, kinds of soil provided to other seeds. Is there any difference in the rate of growth.

Group Activities

1. Practice assigning and accepting responsibility in group work situations.

2. Do some of the above activities in groups.

November

Introduction

By this time, some of the observations that the students are making should be more detailed. Periodically change the objects attached to the map. Represent other things (smells, textures, sounds, etc.) by attaching different objects.

Continue activities in other areas as well. Integrate outdoor activities into all subjects.

Awareness

1. Attach objects which represent all the senses on the bulletin board.

2. Compare soils found in different places on the school ground. What differences do you see?

3. Remove a piece of sod 12" x 12" x 3" and break it up over a piece of newspaper. Collect, sort out and identify as much as you can. (Living or not living.)

Science and Math

1. Measure distances without using rulers or yardsticks. (Count paces, measure with string, etc.)

2. Measure heights by measuring lengths of shadows. Be sure to measure on flat land.

3. Make a map of the school property. Include dimensions.

4. Use a compass and learn the points of the compass.

5. Soil Study: Put 2 inches of soil in a jar and add 5 inches of water. Shake well. What happens?

Group Activities

1. Many of the above activities require 2 or more people to successfully perform the operation.

2. Assign responsibilities to different group members and record results.

3. Some additional group activities include:

   a. Soil percolation tests.

   b. Soil profiles.

December

Introduction

Many outdoor activities may have to be changed to indoor-outdoor activities this month because of the cold weather. December, however, is a good month to begin studying weather and its effects on plants and animals.

The teacher loan kit on mammals has descriptions of several indoor activities which can be done this month. A short description of these activities can be found in Appendix E of this report.

Awareness

1. Find warm places and cold places in a room; find them outside. How do people stay warm when they go outside?

2. Examine different furs in the loan kit. If two different animals live in the same place, why don't they have the same fur.

3. Observe animals first hand (some animals can visit schools as part of a zoo-to-school program) and then role play their behavior.

4. Record common sounds and noises on a tape recorder. Play these back at a later date and identify them.

Science and Math

1. Learn how to use a thermometer. Take readings in different places. What is the temperature of water? of air? Which feels colder?

2. Find warm places and cold places indoors and outdoors.

3. Make a bird feeder. A ruler will be required for measuring the different pieces of wood.

Group Activities

1. With students role playing animal behavior, act out a short play.

2. Assign responsibilities to different people and do some of the above activities in groups.

January

Introduction

The dramatic weather changes which occur in January lead to an interesting assortment of outdoor activities. Winter activities can be fun but they depend on the weather. Wait for good temperatures and appropriate snow conditions.

Graphing activities have been included under the heading of math and science. If a column of mercury in a thermometer is measured, the students can see that as the temperature rises the line gets longer. When these lengths are drawn on graph paper a bar graph results.

Awareness

1. Observe daily weather changes and enter observations (temperatures) on a weather chart. It is easy to represent cloud cover by cutting out pictures of sky from magazines. Paste a picture of the sky which resembles the cloud cover for that day on the weather chart.

2. Measure the depth of snow in different places on successive days.

3. Walk through deep snow. Then walk through the snow wearing snow shoes.

4. Using a thermometer record temperatures at different depths in the snow and at different depths below the ground.

5. Compare different chunks of ice. Why are some more slippery than others? What happens when sand is put on ice?

Science and Math

1. Make a graph of temperature readings every hour during the day.

2. Measure the amount of water in a bucket of snow.

3. Measure the length of time it takes for a snowball to melt.

4. Who can hold onto an ice cube for the longest period of time?

Group Activities

1. Many of the above activities should be done with students working in groups.

2. Make different shapes in the snow (snow sculpture), (cube, rectangular solid, cone, pyramid.) Then make them certain dimensions, (length, width, height).

3. Make snow sculptures of different objects.

February

Introduction

Continue winter activities as weather permits. There isn't a better time of year than winter for language arts, awareness or group activities.

The teacher loan kit also has many suggestions for activities. A good follow-up activity to a graphing lesson is graphing animal populations.

Awareness

1. Examine snow flakes through a hand lens. Draw their shapes.
2. Make snow flake imprints.
3. Compare different kinds of snow (temperature, weight, purity, hardness) and describe them.
4. Look for signs of animal life (tracks, girdled trees, droppings, etc.)

Science and Math

1. What is the temperature of ice water? Add rock salt and measure the temperature again on a day when the temperature is below freezing.
2. Freeze water in a jar. What conclusions can you make? Try to freeze salt water.
3. Using the population figures provided in the teacher loan kit, graph populations of animals.

Group Activities

1. Continue doing winter activities as group activities.
2. Increase the difficulty of the objects to be sculptured.
3. Make animal tracks in the snow. Make designs in the snow.

March

Introduction

The beginning of spring marks the end of snow and ice activities. Now is the time to plant flowers for Easter. Towards the end of March some flowers can be forced for early blooming.

March is also the month for making maple syrup. Several activities can be based on a field trip to a sugar bush.

Flooding often occurs during the spring thaws. Make the students aware of this now because it will be the subject of a future activity.

Awareness

1. Make a dish garden with cuttings from forsythia, pussy willow, and apple trees. Keep the soil moist. Why do these flowers bloom?

2. Tap a maple tree. Collect sap, taste it; boil it for an hour and taste it again.

3. Take a field trip to a sugar bush. Make a list of as many sensory perceptions as possible.

4. Observe flooding streams. Why is the water muddy? Why does the water overflow the banks of the stream?

Math and Science

1. Measure the volume of daily rainfall.

2. Measure the amount of water that drips from a leaking faucet.

3. Measure the amount of water that evaporates when sap is boiled.

Group Activities

Assign projects to groups of students to make different land forms models (valleys, mountains, lakes, rivers, etc.) Eventually the students will make models of watersheds.

April

Introduction

Activities for studying plants should be continued this month. Are all plants the same? Make observations about the requirements of life for different plants. The plants that grow in the certain area make up a habitat, and this determines what animals will be found there. Begin making observations about animal life.

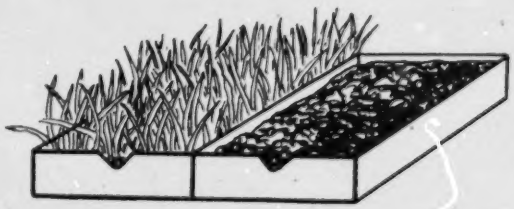
Awareness

1. Make a bulletin board which shows what is found in different habitats. What animals live in each habitat? (See teacher loan kit.)

2. Using language arts techniques:
   a. Observe differences and similarities of two plants.
   b. Observe different adaptations of animals. How do these adaptations help the animal survive?

Math and Science

1. Measure the water run-off on two different areas having different kinds of ground cover.



2. Measure the amount of water that can be poured into a can of gravel, sand, and clay.

Group Activities

1. Play the food chain card game. (See teacher loan kit.)

2. Measure the water run off in groups.

3. Make models using clay, tinfoil, papier-mache', or plaster of paris of different land forms. (Mountains, valleys, rivers, lakes or watersheds.)

May

Introduction

With the good weather, teachers should be able to take full advantage of the resources for outdoor education located near the school. This is also a good time to go on an overnight trip with a class.

Many activities, however, can also be done right on the school property. Gardens (both flower and vegetable) can be planted as well as ornamental shrubs or trees to beautify the school grounds.

Set up individual study plots for each student on the school grounds. These should be exactly one foot square and protected from lawn mowers. Observe them over a period of weeks.

Awareness

1. Compare sensory perceptions in different habitats (fields, trees, lake).
2. Compare feelings and emotions of students in different habitats.
3. Observe changes which occur in a small plot (one foot square).

Science and Math Activities

1. Set up study plots for students.
2. Measure plants and plant growth in the study plot.
3. Plant trees in straight rows (measure the distances between them).
4. Introduce the metric system. (Measure in centimeters and meters.)

Group Activities

1. Organize work crews for planting trees.
2. Compare observations of study plots.

June

Introduction

The final month of the school year is the month many plants and animals begin to grow well. Unfortunately, school may end before observations can be completed. Many of the activities this month are activities which the students can do over the summer without teacher assistance.

This is the month, also, when the weather conditons permit the most outdoor activities.

Awareness

1. The body is a human weather station. We can feel hot and cold, wind, wind speed, rain, etc., but we cannot measure it. Have the students build a micro-climate station to measure the factors which make up weather.

2. Observe plant and animal life in pond water by putting a sample in a flat bottom pyrex baking dish and projecting the images on a screen with an overhead projector.

3. Bury different objects. How long does it take for the objects to decompose. Keep a record of when the objects were buried, what they looked like, and how much they weighed. Dig them up the following fall and make new recordings. Objects such as bread, newspapers, tin cans, glass jars, pieces of wood, and cotton rags lead to the best discussions.

Science and Math

1. Make a map of the school grounds, using a plane table.

2. Make a solar still and collect a glass of drinking water.

3. Collect and rear insects in insect-rearing cages.

Group Activities

1. Plane table mapping must be a group activity.

2. Construction of a micro-climate station should be a group activity.

3. Making a solar still should be a group activity.

V. APPENDICES

A. Proposal Summary

B. Participating Teachers

C. Staff Qualifications and Duties

D. Evaluation Instruments

E. Teacher Loan Kit Summary

F. Description of Monthly Units

G. Budget

APPENDIX A

PROPOSAL SUMMARY

OUTDOOR EDUCATION FOR
THE EMOTIONALLY HANDICAPPED
CENTRAL NEW YORK

Prepared By:
ONONDAGA NATURE CENTERS, INC.

SUBJECT	PAGE
Objectives	1 - 2
Program Phases	2 - 3
Definition of Region Serviced	4 - 5
Criteria for Selection of Participants	5
Details of Program Services	4 - 6
Proposed Time Schedule	6

INTRODUCTION

Children who have learning disabilities related to emotional imbalances present a special challenge to the educator because, despite the strong desire to keep them in the regular classrooms, their responses to learning situations are frequently unpredictable or predictably unconventional, sometimes disrupting regular classroom activities and frequently resulting in less than standard receptivity on the part of the handicapped child.

It may be one of the principal strengths of outdoor education, which in its best expression is informal and activity centered, that it can operate effectively without the normal classroom regimen and strict academic goals. It is flexible enough that a premium may be put on spontaneous and personal reactions.

Still, outdoor education techniques are not widely used in special education in Central New York. The reasons for this have become quite clear in over 8 years of intensive program implementation in Central New York.

1. Teachers do not know what to teach out-of-doors.
2. Teachers do not know how to teach out-of-doors.
3. Teachers do not know where to teach out-of-doors.
4. Teachers do not know why to teach out-of-doors.

In the belief that the best way to upgrade pupil education is to improve the skill and dedication of teachers this program attempts, in a series of integrated phases, to reveal the what, where, how and why of outdoor education for the emotionally handicapped.

STUDENT CENTERED OBJECTIVES OF THE PROGRAM

Recent educational projects have demonstrated that emotionally handicapped children can benefit greatly from a variety of educational experiences broadly classed as outdoor education. The benefits derived include:

1. Increased comprehension of the natural world through direct experiences with nature.
2. Increased comprehension of self through exposure to certain unifying natural laws which encompass both the human and the natural community.
3. Increased comprehension of others through mutual reaction to shared experiences which are highly motivating.

These benefits relate to personal growth patterns which become legitimate objectives of the program.

Objectives of the Program (con't)

1. Improvement in communication skills including development of vocabulary through the reaction to experiences in which all the senses are involved.
    a. Incorporation of more precise terminology in working vocabulary.
    b. Better verbalization of abstract ideas such as beauty, sensory perceptions, feelings and emotional responses.
    c. Ability to report orally on experiences to family and school groups.
2. Increased understanding of environment including some comprehension of local environmental problems.
3. Improvement of social responses especially team work skills; cooperation, sharing and contributing in simple project work.
4. Improvement of manipulative and motor skills through operation of simple equipment used in outdoor studies.

MODE OF ACHIEVEMENT OF THE OBJECTIVES

This program proposes to achieve these objectives by providing an integrated sequence of supervised outdoor experiences, resource development and teacher education.

The sequence of events would be as follows:

Phase I - Environmental Education Services

(a) School site programs - Designed by the teacher and Onondaga Nature Centers educator. Carried out by the educator and teacher. Follow-up ideas and constant program planning aids made available to teachers. A maximum of 15 students per session and 5 - 45 minute sessions per day. Two days per week with a maximum number of 150 students per week. This program will start September 19th and continue to June 13th. A total of 40 weeks of this phase of programming will be offered.

(b) Neighborhood and Special Resource Area Programs provides services of a professional outdoor educator to promote and assist in the operation of outdoor education experiences in the neighborhood and at special resource areas as Beaver Lake Nature Center, Rogers Environmental Education Center and state, county or local public use areas. A maximum of 30 students per day can be offered these services. This service will be offered one day a week for 40 weeks.

Phase II - Development of Specialized Media-Center Resources

(a) Library or media center materials

1. Project outlines and activity sheets, in loose leaf binders, to be added to and upgraded throughout the year (monthly).

2. Audio-visual and audio tutorial materials (circulated through BOCES media center).

3. Community teaching resource catalogues

(b) Classroom Resource Center Materials

Materials for carrel-type or open resource center for student use
Audio visual aids, educational games, project kits

Phase III - Inservice Conferences and Workshops

(a) Pre-Workshop Conference

A meeting of teachers in the 5-county region to discuss the purposes and progress of the program, the workshops, and the methods for making best use of the specialist's services.

(b) Inservice Workshops

A series of regional inservice workshops to prepare teachers and youth leaders working with the emotionally handicapped to make more effective use of community resources for educational enrichment.

Phase IV - Intensive Leadership Training Workshop - 5 days

Key teachers (20) would be trained in outdoor education techniques and would be assisted in developing their own programs for class use. The workshop format would include:

(a) Sessions to upgrade subject matter competence through the process (problem solving technique).

(b) Writing of personal guidelines for incorporating outdoor education experiences into existing curriculum.

(c) Practicum in which each participant has an opportunity to test portions of his or her program on students.

(d) Reworking of personal guidelines and welding of ideas to develop an outline for inservice workshops.

Phase V - Program Evaluation

(a) Evaluation of the teacher education Phases III & IV will be based upon staff-participant critique, augmented by a pre-test and post-test document.

(b) Evaluation of Phase I will be accomplished by pre-test and post-test documents administered by teachers and under supervision of the environmental educator designed to test improv-

ment in comprehension of environmental principles, improvement in communications skills and in cooperative work attitudes as they relate to environment and the process education technique.

3. Phases II & III do not require evaluation.

4. Development of the instruments and analysis of the results will be accomplished by an outside impartial consultant with whatever assistance he requires from project staff.

DEFINITION OF REGION TO BE SERVICED BY THIS PROGRAM

The region envisioned in this program would include Cayuga, Cortland, Madison, Onondaga, Oswego Counties, the municipalities included within these counties and any additional contiguous BOCES districts which may cross county lines adjacent to this region.

The services rendered in Phase I environmental education services would be pro-rated, to the extend possible over the whole region, but would of necessity concentrate on Onondaga-Madison BOCES and Syracuse City Schools where pilot programs would be operated.

CRITERIA FOR THE SELECTION OF PARTICIPANTS:

Phase I - Environmental Education Service - Open to classes in public and private school which include emotionally handicapped children. Also open, as schedule allows to non-school emotionally handicapped youth groups.

Phase III - Inservice Workshops - Open to teachers and youth leaders who work with emotionally handicapped youth.

Phase IV - Leadership Training - Restricted to educators presently working with emotionally handicapped children, who are recommended by their supervisors for their leadership and instructional skills.

DETAILS OF PROGRAM SERVICES

Phase I - ENVIRONMENTAL EDUCATION SERVICES

A stumbling block to integration of outdoor education experiences in any school is the lack of expert guidance in individual school districts. Even when these services are available through BOCES, they are seldom specialized enough to suit the needs of special education programs. This service to start in the fall of 1974, and to run throughout the school year 1974-75 would provide the following services:

1. Curriculum Development Aid
2. School Site Analysis and Planning
3. Resource Development and Use
4. Program Planning and Supervision
5. Instructional Services

This phase of the program could be continued through BOCES contracts with Onondaga Nature Centers, Inc. in future years.

Phase II - DEVELOPMENT OF SPECIALIZED TEACHING RESOURCES

The purpose of this phase is to provide specific materials tailored to the generalized curriculum developed. This work would be performed, at cost, by Onondaga Nature Centers, Inc. Companion materials suitable for use by students in classroom resource centers (to prepare them for outdoor experiences or to allow for follow-up on special interests) will be developed. These will include project sheets, slide-tape productions, simple equipment or games, and activity kits.

A catalogue of the most useful existing resource materials available through BOCES or school districts will be developed, also.

Phase III - INSERVICE WORKSHOPS

These workshops would use the Phase IV format. Each would include a full day of classroom work and would involve approximately ½ full day of homework assignment for each day of classroom work. Four (4) such workshops regionally situated would provide the potential for reaching nearly all teachers of emotionally handicapped in region.

Inservice credit for 30 hours of classroom work, and 15 hours of independent study would be certified.

Phase IV - LEADERSHIP TRAINING WORKSHOP

The five day workshop will consist of process-oriented subject matter coverage, teaching techniques, and a practicum in development and testing of lesson plans.

Workshop Outlines (College and Inservice credit)

1. The principles of Outdoor Education
2. Curriculum Oriented Subject Matter
   - A. Using the senses to explore our world
     - a. Natural History
     - b. Cultural history
   - B. Measuring the Environment - Process Experiments
     - a. Measuring Nature
     - b. Measuring man's influence on nature
     - c. The dimensions of our neighborhood

C. Developing a Perspective about curriculum
   a. A sense of wonder - incorporating the fine arts.
   b. A sense of understanding - math, science, social studies
   c. A sense of commitment - humanities, society, government.

3. Building your own Outdoor Education Program
   a. Developing goals
   b. Developing curriculum integration
   c. Developing lesson plans, activity outlines, and other resource materials.
   d. The practicum - testing selected portions of the program with small groups of children.
   e. Development of a generalized curriculum. This will be modular to allow for inclusion of special interest or need areas for each teacher.

Phase V - As outline on page 3

PROPOSED TIME SCHEDULE

PHASE I - September 9, 1974 - June 13, 1975

PHASE II - October, 1974

PHASE III - October 1974 - June 1975

PHASE IV - July 1975

PHASE V - September 1974 - June 1975

APPENDIX B

PARTICIPATING TEACHERS

School District	School	Teacher
Syracuse	Porter School	Wendy Boxer
"	Porter School	Bonnie Levy
"	P.E.A.C.E.,Inc. Learning Center	Irene Brown Morgan
"	P.E.A.C.E.,Inc. Learning Center	Connie Howlett
"	P.E.A.C.E.,Inc. Learning Center	Nina Sterne
"	St. Joseph's Day Treatment Program	Cindy Frazier
"	House of Providence	Jack Goodman
"	House of Providence	Elaine Mason
"	Percy Hughes School	Mary Hancox
"	Prescott School	Sandra Johns
"	Prescott School	Donna Knarr
"	Prescott School	Francesca Reilly
Oswego BOCES	School for Exceptional Children	Judy Clemens
"	"	Hilary Faust
"	"	Darlene Marcino
"	"	Anne Marie Murphy
"	"	Sally Nettles
"	"	Joan Springstead
Cortland BOCES	McEvoy Educational Center	Linda Allen
"	"	Pat Brodie
"	"	Art Renschler
Onondaga Madison BOCES	Park Hill School	Margaret McCarthy
"	Woodland School	Audrey Hoxsie
Cayuga BOCES	Auburn Central Elementary School	Judy Wells

APPENDIX C

STAFF QUALIFICATIONS AND DUTIES

Project Director - John A. Weeks

B.S. Cornell - Animal Ecology, M. S. Syracuse - Plant Ecology
1949-1957 Wildlife Biologist and Game Manager, NYS Conservation Dept.
1957-1966 Associate professor of biology - S.U.N.Y. at Oswego
1966-1973 Director, Rogers Environmental Education Center, Sherburne, N.Y.
1973- Director, Onondaga Nature Centers, Inc., Baldwinsville, N.Y.

Mr. Weeks has served as consultant to the NY State Education Department, to various units of the State University system including Albany, Cornell, Buffalo, New Paltz, Plattsburgh, Syracuse, Binghamtor and Morrisville, and to dozens of school districts, municipalities, state and local governments in the northeastern United States.

He has served as a state officer and on committees in N.Y.S. Outdoor Education Association and the Association of Interpretive Naturalist.

He has written numerous articles on natural history, and on natural history education.

Project Duties

1. Perform all initial contracts with BOCES, with school districts and with the State Education Department in getting programs initiated.

2. Serve as a liaison between Onondaga Madison BCCES nad Onondaga Nature Centers, Inc., to maintain continuity of programs.

3. Serve with Dr. Regensburger as a committee.

4. Oversee the operation of the program and assure that the resources of Onondaga Nature Centers, Inc. and Onondaga Madison BOCES are available to the program wherever it is appropriate.

Project Assistant Director - Thomas P. Benjamin

B.S. 1972 from University of Michigan in Environmental Education
Summer 1967-1968 Park Naturalist - Gilbert Lake State Park
Spring and Summer 1969-1970 Recreation Specialist - Central N.Y. Park Commission
1969-1970-1972 Weekend Naturalist - Rogers Environmental Education Center
Spring and Summer 1972-1973 Environmental Educator - Rogers Environmental Education Center
1973-1974 Teacher Naturalist - Onondaga Nature Centers, Inc. BOCES program
1974 Coordinator of Educational Services, Onondaga Nature Centers, Inc.

Mr. Benjamin has taught in numerous teacher workshops and has acted as an environmental education consultant to several Central New York school districts.
He has also had special teaching assignments in Michigan and in Sheffield, England.

Project Duties

1. Recruit staff and organize program

2. Orient and supervise project staff, including environmental specialist, consultants, and volunteer staff.

3. Administer project program assuring that time schedules and commitments are adhered to.

4. Consult with project committee periodically, reporting on progress and needs.

5. Supervise employment records, payrolls and the maintenance of fiscal records.

6. Prepare program reports.

7. Supervise project evaluation

8. Provide backup instruction to participating groups where required.

Environmental Education Specialist - Jack Gramlich

1967 B.A. Dartmouth College - History
1971 M.S. Syracuse - Education, graduate studies at College of Environmental Science and Forestry in Syracuse
1967-1969 Peace Corps/Nepal
1969-1971 9th grade Social Studies teacher at Grant Jr. High
1971-72 8th grade Social Studies teacher at Phoenix
1972-1973 Teacher at Elmcrest Childrens Home

Project Duties

1. Organize and chair a committee of participating teachers to assist with the operation of the program.

2. Meet with teachers and administrators to assess individual and group needs of participating schools.

3. Design programs, under supervision of assistant director, and with assistance of teachers' committee.

4. Operate programs for students including orientation of teachers, group instruction and assistance with follow-up activities.

5. Organize and operate inservice and leadership workshops.

6. Oversee the design and production of media including A-V programs, field kits, worksheets, travelling exhibits, and where needed, assist in the

establishment of individual learning centers.

7. Help assistant Project Director in the preparation of reports, fiscal records and time schedules.

Staff Artist - Cindy Norderhus

B.A. 1973 S.U.N.Y. at Potsdam - Art Major, Biology Minor
She has skill and experience in graphics, audio visual production layout of publications.

Project Duties

She will edit and supervise production of special media materials.

Payroll Clerk - Christa DeBottis

Native of West Germany - naturalized U.S . Citizen. Education equivalent to Junior College in language and business. Mrs. DeBottis is office manager and administrative assistant for Onondaga Nature Centers, Inc. She has served as a finance clerk and bilingual secretary for the U.S. Forces in Europe, and has had 10 years varied secretarial, clerical and administrative experience in the United States.

Project Duties

She will take care of payrolls, financial records and fiscal reports for the project.

Secretary - Jane Ryan

Secretary and printer for Onondaga Nature Centers, Inc.
Mrs. Ryan has had 7 years clerical and secretarial experience for Drew University, Madison, New Jersey and New York State Artificial Breeders, Ithaca, N.Y.

Project Duties

She will handle all correspondence, mailing, typing and filing for the project.

Project Evaluator - James F. Miller

B.S. in ED. 1959 Clarion State College, Clarion, Pa.
M.S. in ED. 1970 State University College, Brockport, New York

History, additional graduate work, St. Bonaventure University
Education; Syracuse University; S.U.C. Oswego

1959-1966 Teacher of Social Studies, Gowanda Central School, Olean City Schools
1966-1968 Assistant to the Superintendant of Schools, Olean, New York
1968-1970 Graduate Fellow in Research (U.S.O.E. Fellowship) S.U.C. Brockport
1969-1970 Graduate Intern, Central New York Regional Educational Planning office (Title III ESEA)
1970-1973 Associate for Planning; Regional Programs and Research, Central New York Regional Educational Planning Office.

1973 Staff Associate, Richard Ford Associates
1973-1974 Assistant Director, Computer Based Project for the Evaluation of Media for the Handicapped.
1974-1975 Director, Medical Division of Atlas Linen Supply, Inc.
1975 Independent Consultant in Educational Planning, Evaluation and Research.

Mr. Miller has been engaged in various testing, evaluation and research activities since 1966. As assistant to the Superintendent of Schools in Olean, New York, Mr. Miller was responsible for the standardized testing program and the evaluation of all federally funded projects. Mr. Miller has designed and served as chief evaluator or principal investigator for numerous projects. He has published articles on educational planning, evaluation and futures. He has been a presenter and symposia participant at the Northeastern Educational Research Association annual conferences.

Project Duties

1. Develop evaluation instruments for project.

2. Evaluate project activities.

APPENDIX D

Evaluation Instruments

1. Student Content Test
2. Student Attitude Survey
3. Classroom Behavior Rating Scale
4. Participant Evaluation Form

ONONDAGA NATURE CENTERS, INC.

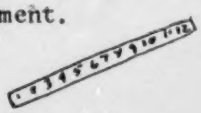
STUDENT CONTENT TEST

Name_____

1. Circle the parts of our bodies which help us sense different things in the environment.

a. b. c. d.

2. Circle the pictures of objects which help us learn about parts of the environment.

a.  b. c.

3. Which of the eight drawings below show things that are living. Circle them.

4. Here is a drawing of a rabbit. Which of the following is true about a rabbit?

___a - This animal has bones

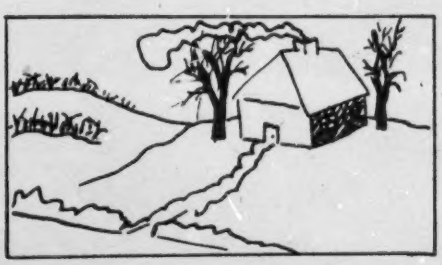
___b - This animal lays eggs

___c - This animal is warm-blooded

___d - This animal feeds it's young milk from its own body.

5. Here is a picture of a bean plant. Circle the part where the minerals enter the plant?

6. Here are two pictures of the same house. Circle the picture of the house in the winter.



7. Here are two pictures that show a change in the weather. Make an "x" next to the environmental factors which have changed.

Factor

___1-water

___2-air

___3-light

___4-temperature

___5-soil

8. Circle the objects that determine what the weather will be.

9. Draw pictures of 3 different plants that grow in your school yard.

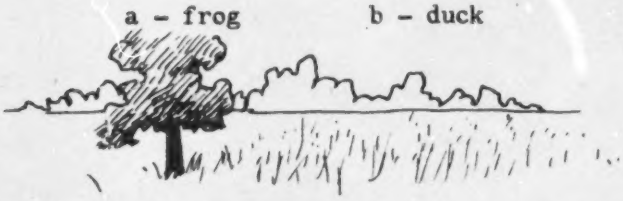
a.		c.

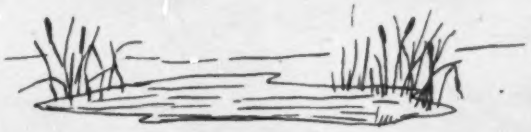
10. Draw pictures of 3 different animals that live near your school

a.	b.	c.

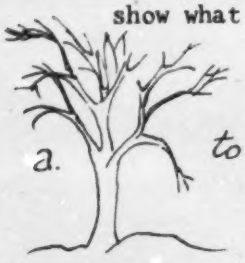
11. Draw a line from the animal to the place where each animal lives.

a - frog b - duck c - pheasant d - rabbit e - fish

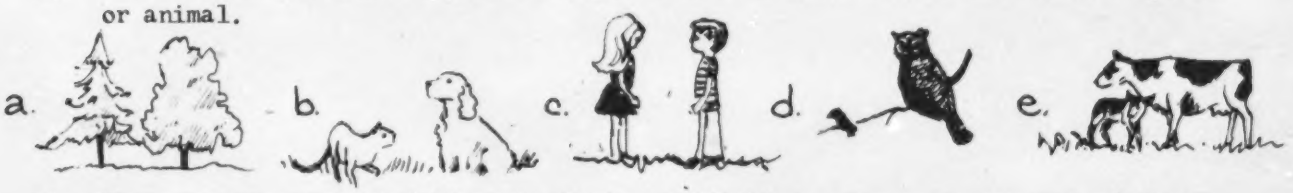




12. Here are pictures of plants and animals in the winter. Change the pictures to show what they would look like in the summer.



13. Draw circles around the pictures that show 2 members of the same kind of plant or animal.



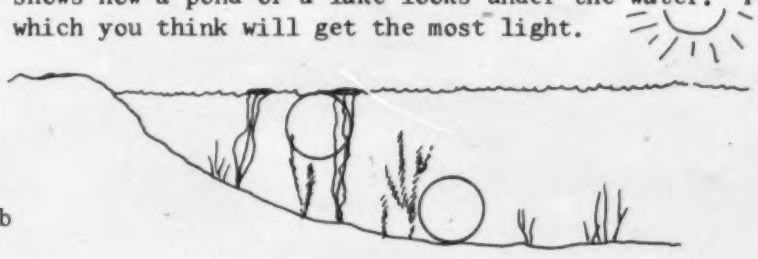
14. Here are two rows of different plants. A light is very near one end of the rows. All the plants were planted on the same day. But some of the plants grew bigger than others. Which plants need more light.

____Row A

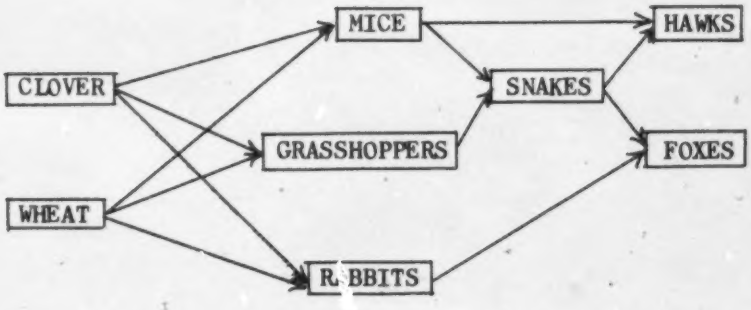
____Row B

15. Circle the part of this picture which shows the greatest single source of energy.

16. The picture below shows how a pond or a lake looks under the water. Put an "X" in the circle which you think will get the most light.



17. This is a food web



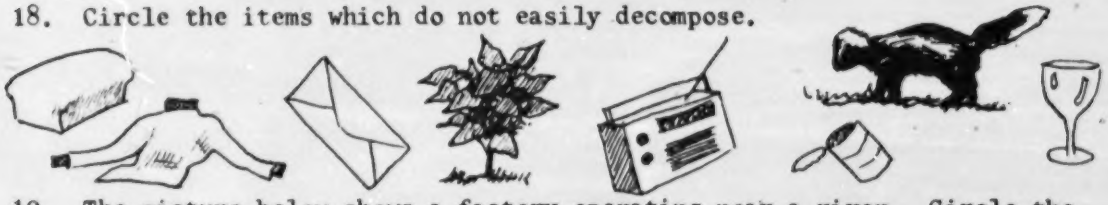
Which of the following represents a food chain.

____Wheat ⟶ Mice ⟶ Snakes ⟶ Hawks

____Rabbit ⟶ Clover ⟶ Snakes ⟶ Foxes

____Wheat ⟶ Clover ⟶ Hawks ⟶ Foxes

18. Circle the items which do not easily decompose.



19. The picture below shows a factory operating near a river. Circle the places in this picture where you can find industrial pollution.

20. The pictures below show the same place at two different times. Put an "X" next to the reasons why the environment changed.

___a - forest fire

___b - insect invasion

___c - logging

___d - cleared by man for farming

___e - deer browsing

ONONDAGA NATURE CENTERS, INC.

STUDENT ATTITUDE SURVEY

Name_____ Date_____

Circle the letter of your choice:

1. I am able to do the work my teacher asks me to do:

   A - All of the time
   B - Most of the time
   C - Some of the time
   D - Almost never
   E - Never

2. I like to go on a trip to the park:

   A - Very much
   B - Much
   C - OK
   D - Not much
   E - Not at all

3. If I feel just a little sick in the morning I would:

   A - Still want to go to school
   B - Probably want to go to school
   C - Not care whether or not I went to school
   D - Maybe want to stay home
   E - For sure want to stay home

4. I think I am a:

   A - Very good worker
   B - Good worker
   C - OK worker
   D - Bad student
   E - Very bad student

5. As this year passes I find that I:

   A - Like school a whole lot
   B - Like school a lot
   C - Like school the same
   D - Like school less
   E - Don't like school

6. I like to play outdoors:

A - All of the time
B - Most of the time
C - Some of the time
D - Almost never
E - Never

7. Problems that I have in school are:

A - Always taken care of
B - Usually taken care of
C - Sometimes taken care of and sometimes not listened to
D - Almost never listened to
E - Never listened to

8. I behave well in school:

A - All of the time
B - Most of the time
C - Some of the time
D - Almost never
E - Never

9. I think the boys and girls in my school are:

A - Very friendly
B - Friendly
C - OK
D - Unfriendly
E - Very unfriendly

10. I enjoy going to school:

A - Very much
B - Much
C - OK
D - Not much
E - Not at all

11. Most of the things we are taught in school are:

A - Very interesting
B - Interesting
C - OK
D - Sometimes interesting
E - Not interesting

12. My teachers think I behave well in school:

A - All of the time
B - Most of the time
C - Some of the time
D - Almost never
E - Never

13. I enjoy going to summer camp:

A - Very much
B - Much
C - OK
D - Not much
E - Not at all

14. When I think of the other children in my room I like:

A - All of them
B - Most of them
C - Some of them
D - Few of them
E - None of them

15. I like to go on class field trips:

A - All of the time
B - Most of the time
C - Some of the time
D - Almost never
E - Never

16. I can do more things than people think I can do:

A - All of the time
B - Most of the time
C - Some of the time
D - Almost never
E - Never

17. Going to school and learning are:

A - A lot of fun
B - Some fun
C - Not bad
D - Not much fun
E - No fun at all

18. If there is something I don't like about my room I would:

A - Tell my teacher
B - Sometimes tell my teacher
C - Maybe tell my teacher
D - Not tell my teacher
E - Be afraid to tell my teacher

19. I think I can do the same things other people can do:

A - All of the time
B - Most of the time
C - Some of the time
D - Almost never
E - Never

20. I like to go exploring in the woods:

A - All of the time
B - Most of the time
C - Some of the time
D - Almost never
E - Never

21. How many summers have you gone to summer camp?

A - 4 years
B - 3 years
C - 2 years
D - 1 year
E - Never

GENERAL CLASSROOM BEHAVIOR
TEACHER RATING SCALE

Teacher_____

Student_____

Date of Rating_____ Total Score_____

GENERAL SCHOOL CLASSROOM BEHAVIOR	All of Time 1	Most of Time 2	Some of Time 3	Almost Never 4	Never 5
1. Works well independently					
2. Works well in a group					
3. Follows verbal instructions-one at a time					
4. Follows verbal instructions in a sequence					
5. Follows written instructions one at a time					
6. Follows written instructions in a sequence					
7. Knows when to ask for advice					
8. Able to accept teacher criticism					
9. Able to accept peer assistance					
10. Needs constant support to complete a task					
11. Participates well in play activities					
12. Able to work on a given task until completed					

PARTICIPANT EVALUATION

Outdoor Education for the Emotionally
Handicapped of Central New York

Name_____ Position_____

Date_____ School_____

Directions: The purpose of this instrument is to help the staff of the Onondaga Nature Centers in the development of programs, policies and practices designed to meet tne outdoor educational needs of handicapped children. The statements, below, are designed to allow the participants to rate the various aspects of the current program. Please rate each item 1 - 2 - 3 - 4 - or 5. 1 being the lowest rating, i.e. poor, not helpful, etc.; 5 being the highest, i.e., excellent, very helpful, etc. Place your rating in the space provided at the left of each question. Thank you for your cooperation with the evaluation and the project.

_____1. The project helped me understand why outdoor education is important.

_____2. As a result of my participation in the project I have a better understanding of what to teach about the out of doors.

_____3. I have a better understanding of how to teach outdoor education.

_____4. I am more aware of the facilities available for teaching outdoor education.

_____5. I have incorporated outdoor education into my teaching schedule on a regular basis.

_____6. My students have increased their comprehension of the natural world through the experiences provided through the project.

_____7. The experiences provided by the project have expanded my students vocabulary.

_____8. The workshops, conferences, etc. provided by Onondaga Nature Center were helpful to me in planning outdoor education experiences for my students. (If you did not attend any of the above place an 0 in the space at the left.)

_____9. The Nature Center Staff has been helpful to me in planning outdoor education for my students.

____10. I would participate in the outdoor education project next year; 1. Only under threat of death. 2. If my administrator gave me no choice. 3. With mild protest. 4. Gladly. 5. And encourage other teachers of the handicapped to do so.

11. What were the strong points of the program?

12. I would suggest the following to improve or strengthen the program:

APPENDIX E

TEACHER LOAN KIT SUMMARY

A - Natural Materials available for distribution

1. Skins - raccoon, oppossum, mink muskrat, squirrel, mouse, skunk, weasel, rabbit, fox.

2. Animal signs - cracked seeds, chewed nuts, owl pellets, gnawed stick (beaver), gridled stick (rabbit) and deer antlers.

B - Activities

1. Match animal with habitat - make a bulletin board of different habitats and attach pictures of animals to the appropriate habitat.

2. Make food chains - arrange the animals from a certain habitat into a food chain. A set of cards accompanies the furs.

3. Graph making - compare population growth potential of two different species. Make a graph of the group using pictures to represent individual animals. Yearly population numbers are included.

4. Awareness Acitivities - compare textures, color, thickness etc. of different furs - notice similarities and differences.

5. Adaptations - compare adaptations of animals for self protection.

6. Role Playing - observe behavior of animals and then imitate the behavior of the animals.

APPENDIX F

DESCRIPTION OF MONTHLY UNITS

Each month the students participating in the outdoor education program were taught a different unit. The first lesson of the unit was taught by the ONC educator and the follow-up lessons were taught by the classroom teachers.

The units of the past year are described in this section. The units were not always the same for each class due to the age, the interest, and the ability of the students.

I. October - Awareness - basic requirements of plants
   A. ONC Lesson: Requirements for Life
      1. Soil, air, water and light are essential for plants to live.
      2. Different plants need these in different amounts
      3. Plants grow where these essentials exist in the right amounts.
      4. Activities.
         a. Soil percolation tests in different areas.
         b. Observe water run-off according to type of ground cover.
   B. Follow-up Lessons taught by classroom teacher
      1. Make a class terrarium
         a. Make provisions for the right amounts of air, water, soil and light for the plants available.
         b. Use care in making the terrarium to prevent injury to plants.
      2. Germinate seeds and propagate plants
         a. Put wet paper towels in a glass, line the glass with seeds. Watch the seeds germinate.
         b. Plant carrot tops.
         c. Observe capillary action in celery by using colored water
      3. Plant growth experiments
         a. Vary the amount of sunlight - observe growth rates of plants.
         b. Vary amount of water - observe growth rates of plants.
         c. Vary the soil quality - observe growth rates of plants.
      4. Nature Hike in woods close to school.
         a. Observe differences in plants.
         b. Observe differences in amounts of water, and kinds of soil.
         c. Determine which plants get the most sunlight.

II. November - Awareness - Basic requirements of animals.
   A. ONC Lesson - Requirements for life for birds
      1. Identify similarities and differences of two mounted birds. Make deductions about what they eat and where they live.
      2. Field trip to a nearby natural area.
         a. Feed ducks at Webster Pond.
         b. Observe behavior of ducks.
      3. Identify essentials of life for birds.
   B. Follow-up Lessons taught by classroom teacher.
      1. Build Brush piles.
         a. Animals need shelter and food.
         b. Work together on a group project.

2. Make Bird Feeders
   a. Follow directions.
   b. Identify what birds eat in winter.
   c. Maintain the bird feeder (record observations).
3. Make a Bulletin Board Display of a Beaver Pond.
   a. Describe how a beaver changes its habitat. Why?
   b. Make a map of a beaver pond on a bulletin board.
   c. Dam up a small stream like a beaver might (group activity).
4. Guided Walk
   a. Observe animal homes.
   b. Look for animal signs.
   c. Observe animals and animal behavior.

III. December - Plants and Animals
A. ONC Lesson - Food chains.
   1. Discuss what plants and animals live in the following habitats (old field, forest, pond).
   2. Show a food chain for each habitat using mounted specimens.
   3. Play the food chain card game.
B. Follow-up lessons taught by classroom teacher.
   1. Pond Study.
      a. Observe plant and animal life in a jar of pond water.
      b. Compare samples of soil and water from the pond with samples from other areas. Observe differences.
   2. Web of life activity.
      a. Cut out pictures of plants and animals that live in a certain area.
      b. Arrange animals in a food chain.
      c. Show dependence of animals on plant life.
   3. Examine the effects of a deteriorating habitat on plant and animal life.
      a. Find examples of pollution near the school.
      b. Show how different kinds of pollution affect plant and animal life.
      c. Identify what must be done to eliminate some kinds of pollution.
   4. Guided Walk
      a. Observe changes in animal life due to changing conditions in the natural world.
      b. Find parts of food chains.

IV. January - Winter Activities
A. ONC Lesson - Winter Activities
   1. Measure the temperature in different places in the classroom.
   2. Measure temperatures outside.
      a. Find warm places.
      b. Find cold places.
   3. Perform awareness activities with snow and ice.
B. Follow-up lessons taught by classroom teacher.
   1. Snow study activities.
      a. How long does it take to melt snow.
      b. What effect does color have on ability to absorb heat.
      c. How much water is in a certain volume of snow.
   2. Ice study activities
      a. Make colored icicles.
      b. Bend a slab of ice.
      c. Cut ice with a thin wire.

3. Snow flake stories.
   a. Observe and compare different snow flakes.
   b. Develop vocabulary related to winter.
   c. What is the life story of the snow in your school yard.
4. Make observations of animals during winter.
   a. Record observations at a bird feeder.
   b. Find and identify animal tracks in the snow.

V. February - Weather, math activites.
   A. ONC Lesson
      1. Graph temperatures for the month of January, record daily temperature readings.
      2. Graph animal populations - use information in the teacher loan kit.
   B. Follow-up lessons taught by classroom teacher.
      1. Measure the temperature of warm water.
         a. Observe any change as water cools (add snow and ice).
         b. Measure the temperature of frozen water. Add rock salt and let the ice and water sit for an hour. Measure the temperature again.
      2. Make a weather chart.
         a. Record daily temperature readings on a weather chart.
         b. Observe cloud cover and record observations.
         c. Observe and measure daily precipitations.
      3. Measure Snow Depth.
         a. Measure the depth of snow in different places.
         b. Measure any new snowfall.
         c. Measure snow depth on consecutive days. Why is there any change?
         d. Test snow purity (melt snow and filter it with filter paper).

VI. March - Soils and Rocks.
   A. ONC Lesson
      1. How rocks are made.
      2. How soil is made.
      3. Observe differences in rocks.
      4. Soil Study.
      5. Language Arts activity on describing the differences of rocks.
   B. Follow-up Lessons taught by classroom teacher.
      1. Classify rocks as hard or soft (scratch test).
      2. Soil investigation.
         a. Observe types of soil found in a small area.
         b. Count and measure rocks in the same area.
      3. Stream Table Activity.
         a. Simulate rain on barren land. Identify streams, lakes, and watersheds as they form. Find examples of erosion.
         b. Measure water run-off.
         c. Measure amount of soil washed away by rain.
      4. Soil Making Activities.
         a. Rub bricks together.
         b. Put water in a jar and freeze the water. How does this make soil?
         c. Put limestone in vinegar. Observe the reaction.

VII. April - Conservation Project
A. ONC Lesson - Conservation Project.
1. Contribute to the community by working on a conservation project.
a. Tree planting.
b. Erosion control.
2. Explain how the habitat is improved.
B. Follow-up lesson taught by classroom teachers.
1. Plant a garden or help a class of younger students plant a garden.
a. Prepare the soil for planting.
b. Plant the seeds.
c. Weed the garden.
2. Conservation project work.
a. Make models (before-after) showing the results of a tree planting project.
b. Take photographs and make a bulletin board display.
3. Visit a sugar bush.
a. Awareness activities - list sensory perceptions.
b. Explain the process of making maple syrup.
c. Measure volume of sap and volume of syrup - compare totals.

VIII. May - Measuring With and Without a Ruler
A. ONC Lessor - Measuring
1. Describe rulers, tape measures, yardsticks, etc.
2. Measure distances using each instrument.
3. Compare advantages and disadvantages of each instrument.
4. Measure distances using only student's pace.
B. Follow-up lessons taught by classroom teacher.
1. Measure distances by pacing.
a. Measure dimensions of school.
b. Measure perimeter of lawn.
c. Measure length of fence.
2. Measure height of unknown objects.
a. Measure the length of the shadow of a know height, then measure the length of an unknown height.
b. Use proportions to measure height.
3. Measure the circumference of trees.
4. Measure square area.
a. Count tiles in a class room.
b. Compute square feet in a school yard.

APPENDIX G

FINAL PROJECT REPORT OF
EXPENDITURES FOR PROJECT 75-940
from
August 1, 1974 to June 30, 1975

1.	Salaries for Professional Personnel	Total	FTE	Budgeted		Encumbered	
	Project Director	1	20%	$4,200		$4,200	
	Assistant Director	1	60%	$6,300		$6,300	
	Environmental Educator	1	100%	$8,200		$8,200	
	Subtotal				$18,700		$18,700
2.	Salaries for Non-Professional Personnel						
	Media Technician	1	50%	$3,300		$3,300	
	Secretarial	1	66%	$4,335		$4,335	
	Payroll Clerk	1	10%	$800		$800	
	Subtotal				$8,435		$8,435
3.	Mileage			$1,500		$1,500	
	Subtotal				$1,500		$1,500
4.	Contract Services for Instruction or Evaluation						
	Consultant for Workshop Instruction $75/day for 5 days - 2 consultants			$750		$750	
	Inservice Workshop Consultant $75/day for 5 days - 2 consultants			$750		$750	
	Consultant for Project Evaluation			$1,800		$1,800	
	Production of Project Report			$200		$200	
	Subtotal				$3,500		$3,500
5.	Audio Visual Materials						
	Films, slides, carousels			$100		$100	
	Cassette Tapes			$100		$100	
	Subtotal				$200		$200
6.	Other Miscellaneous Expenses for Instruction						
	Workbook Materials			$100		$100	
	Traveling Exhibits			$300		$300	
	10 Field Kits (science equipment)			$400		$400	
	Paper and Printing			$200		$200	
	Subtotal				$1,000		$1,000

		Budgeted		Encumbered	
7.	Contract Services for Staff Development				
	Rental of Facility for 5 Day Workshop 2 meals	$1,000		$1,000	
	Staff Training and Conferences	$500		$500	
	Subtotal		$1,500		$1,500
8.	Other Miscellaneous Cost				
	Phone Rental - 1/2 yearly cost	$350		$350	
9.	Expenses for Maintenance of Plant				
	Custodian 4 hrs./wk/50 wks	$500		$500	
	Trash Removal	$15		$15	
	Maintenance Supplies	$100		$100	
	Subtotal		$615		$615
10.	Employer Contribution for Employee Benefits				
	Social Security	$1,499		$1,499	
	Retirement	$1,362		$1,362	
	Health Insurance	$674		$674	
	Workmens Compensation Insurance	$104		$104	
	Unemployment Insurance	$552		$552	
	N.Y.S. Disability	$61		$61	
	Subtotal		$4,252		$4,252
	Total Project Budget		$40,052		
	Total Encumbered Budget				$40,052